*A Publication of the 18th MEDCOM Preventive Services Directorate*

*"Preserving the Fighting Strength"*

# UPDATE

**Disease Non-battle Injury in the Korean Theater**

No. 7; Vol. 1
July 2002

# INTRODUCTION

This month's issue introduces the new 18th MEDCOM Tobacco Cessation Policy, and also reviews outpatient antibiotic use in common disorders. The current rise of antimicrobial resistance to antibiotics is of great concern to all prescribers. This article was extracted from a recent CME lecture by LTC Fishbain, Infectious Disease Department at Walter Reed Army Medical Center.

As always, your thoughts on these subjects are welcome. Please contact the Update via email, at Laura.Pacha@kor.amedd.army.mil.

## Tobacco Cessation Program

The 18th MEDCOM regulation for Tobacco Cessation is published and is available on the web. This document delineates roles and responsibility for the Tobacco Cessation program in Korea. It also allows for each military treatment facility to appoint a provider contact who will work with the Tobacco Cessation Program Facilitator to provide the program to interested participants. An order set has been created in CHCS to facilitate order entry (see page 7). To review program procedures, the complete regulation is available at: https://www.seoul.amedd.army.mil/Pm/18fun-pm.htm.

Area Health Promotion coordinators and Community Health Nurses who facilitate the program have received training through the American Lung Association's "Freedom From Smoking", American Cancer Society's "Fresh Start Program" and the Tobacco Use certification course. Clinics and units interested in holding a course should contact the Area Health Promotion Coordinators or facilitators (see box below) for scheduling. Interested participations may self refer or be referred by their health care provider to this program. Health Promotion coordinators will coordinate with the appointed clinic provider for the initial Zyban or nicotine patch prescription, for those participants interested in using adjunctive therapy. Priviledged Community Health Nurses will coordinate patient follow-up and medication refills as appropriate.

The Tobacco Assessment Form will be completed at the second group session, then reviewed by the provider POC for possible prescriptions. This form will be placed in the patient's medical record.

### Freedom from Smoking Faciliators

| AREA | POC | Phone # | Fax # |
|---|---|---|---|
| Area I | Mr. Kenneth Cobb<br>Kenneth.Cobb@kor.amedd.army.mil | 730-3542 | 730-6727 |
| Area II | Mrs. OkHee Suh<br>Ok.Suh@kor.amedd.army.mil | 736-3029 | 736-3028 |
| Area III | Mr. Steve Norton<br>NortonS@usfk.korea.army.mil | 753-7367 | (Area III CCC) |
| Area IV | Mrs. Victoria Knighton<br>Victoria.Knighton@kor.amedd.army.mil | 764-5213 | 764-5061 |

# Antibiotic Prescribing

The rise of antibiotic resistance is of great concern to everyone. Although the development of antibiotics was hailed as a miracle of modern medicine, the growing problem of resistance is now an immediate threat to all medicine, including dentistry and veterinary medicine. As providers, it is our responsibility to monitor our prescribing practices and stay up-to-date with the latest trends in order to best serve our patients. This article seeks to promote the practical and judicious use of antibiotic in the hope of forestalling the development of additional resistance.

## Upper Respiratory Tract Infections

A common scenario in most military treatment facilities: a 35 year-old otherwise healthy male is seeing you because of upper respiratory complaints. He has noted low-grade fevers (but has not taken his temperature), nasal congestion producing white to yellow discharge, headache, cough and fatigue. All symptoms have been present for 3 days.

*What would you advise this patient to do and what would you prescribe?*

Despite the fact that the majority of upper respiratory infections are viral in nature and require only symptomatic treatment, they account for up to 76% of all antibiotic prescriptions in some studies. In truth, antibiotics offer no benefit and in fact offer some potential disadvantages. Decongestants and cough suppressants would be suggested. Non-steroidal anti-inflammatory drugs may be appropriate for myalgias. However, many providers are then facing a patient who wants something and who may believe that antibiotics are 'magic.' The temptation to succumb to patient pressure and get on to the next appointment can be overwhelming. But taking a few minutes to educate the patient will correct common misconceptions and help to maintain antibiotic effectiveness in the community.

Two weeks later you are seeing the same patient back. He initially experienced improvement in his symptoms, only to awaken yesterday with congestion, right-sided facial pressure, green nasal discharge, and upper right molar ache. On examination of his right nasal passage you see green mucous and swollen tissues.

*What are the most likely organisms responsible for this condition?*
*What is this condition called?*

Bacterial overgrowth occurs in the setting of dysfunction of the normal sinus drainage. This is commonly seen after viral infections and with allergic rhinitis. Organisms involved include *S. pneumoniae, H. influenza, M. catarrhalis,* occasionally staphylococcal species and sometimes gram-negative rods.

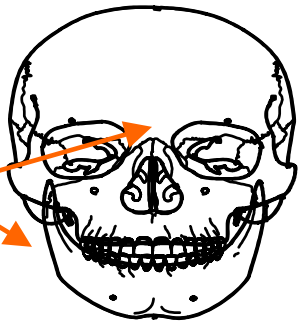
*Current literature abounds with descriptions of resistance in these pathogens so now what do you pick for antibiotics?*

The most important factor related to the therapy of sinusitis is drainage. Antibiotics may or my not have a role, depending on what sources you read, but decongestants—both topical systemic—are critical to treatment success.

**FOR ORAL SOURCES:**
PCN or Amoxicillin
+ Metronidazole
**OR**
Clindamycin alone

**FOR OTHER SINUSITIS:**
Amoxicillin if not used previously
Trimethoprim/Sulbactam
Azithromycin
Levofloxacin
Clindamycin with Ciprofloxacin

****DO NOT FORGET MEDICATIONS TO AID DRAINAGE!!!!**



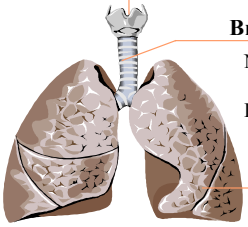
## Lower Respiratory Tract Infections

Next, a 35 year-old woman presents with acute onset fever with chills, a cough that is non-productive, malaise and some dyspnea on exertion. Physical examination reveals crackles in the right lung base, and CXR confirms your suspicion of a right lower lobe infiltrate.

*Name the 6 most common pathogens associated with community- acquired pneumonia.*

*S. pneumoniae*
*H. influenzae*
*M. catarrhalis*
*Mycoplasma pneumoniae*
*Chlamydia pneumoniae*
Legionella species

*What would you consider for therapy in this patient?*



**Pharyngitis**

No therapy—usually viral
PCN--BIC preferred for strep throat; Other options include amox, clindamycin, emycin/azithromycin, or cephalexin

**Laryngitis**

No treatment—usually viral
Consider doxycycline for C. pneumoniae if sx persist

**Bronchitis (acute, normal lung)**

No treatment - viral viral viral

Doxycycline sometimes

**AECB**

TMP/sulfa
Amox/clavulanate
Newer quinolone

**Pneumonia**

Newer quinolone (not cipro)

Consider azithromycin

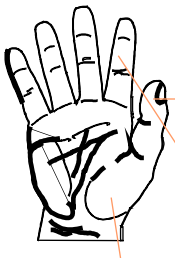
Ceftriaxone + azithro if admitted

## Skin Infections

A 24 year-old female bumps her leg on the coffee table with minimal trauma. Two days later she notes the onset of fevers, chills and pain in the area. Shortly afterwards, she notes some redness of the area which rapidly expands over the next 6 hours. On presentation she is ill-appearing, febrile, and has significant erythema of her lower extremity.

*What organism(s) is/are most likely?*
*What is this condition called?*
*How does it differ from erysipelas?*

Streptococcal species are by far most common causes of cellulitis. The rapid spread of erythema is consistent with toxin production by the streptococcal species. Therefore, increasing erythema may not always indicate a lack of treatment efficacy, or the need for IV antibiotics. However, the antibiotic used should have activity against staphylococcus and streptococcal organisms. Examples include: first generation cephalosporins, the newer macrolides, clindamycin and amoxicillin/clavulanate.



**Paronychia**

Cephalexin
Clindamycin
Erythromycin
Trimeth/sulfa
Doxycycline
Acyclovir!!

**Emaceration (Trench foot)**

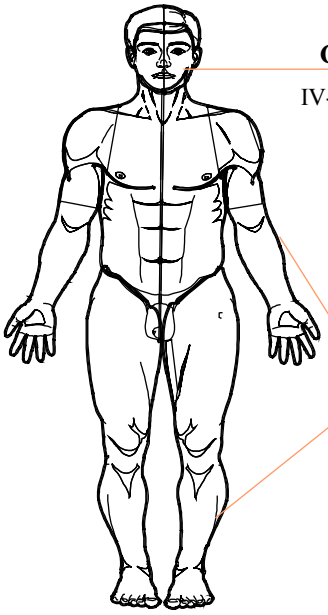
Same as for paronychia
Add ketoconazole or topical antifungals once bacterial infection controlled

**Diving/Fishing Injury**

Same therapy as for cellulitis unless:
Blisters present
Patient very ill appearing or extremely rapid onset
* add doxycycline or cipro to regimen

**Cellulitis**

Start with IV
cefazolin
clindamycin



**Cellulitis/erysipelas**

IV--cefazolin
clinda
ceftriaxone

If associated with sinusitis
ceftriaxone
amox/clav - amp/sulbactam

**Cellulitis**

cephalexin
clindamycin
azithro
IV--cefazolin
clinda
ceftriaxone

## Cost Comparison

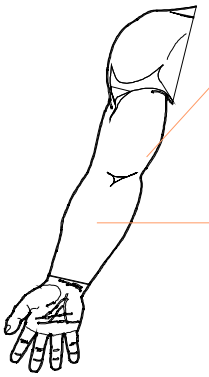
Treatment:

- Azithromycin (5 days): 24.83
- Amoxicillin/clavulanate (10 days): $45.54
- Trimethoprim/sulfamethoxazole (10days): $1.40

Prevention:

- Handwashing: pennies a day!

A 16 year-old boy complains of painful swelling and pain on the medial aspect of his left arm. On examination he has a 3x3 cm area of swelling that is extremely tender. The overlying erythema and central firmness is consistent with epitrochlear adenopathy.
Thoughts?



**Adenopathy-Regional**

Cat-scratch disease
Not usually caused by staph/strep in adults
In foreign born, think TB
In inguinal area think chlamydia, syphilis, LGV

If associated with lymphangitis, then treat for cellulitis

**Boils-Furuncles**

Usually do not need antibiotics
If associated with surrounding cellulitis, treat for cellulitis.
If many present at one time, treat for staph
cephalexin
clindamycin
azithromycin

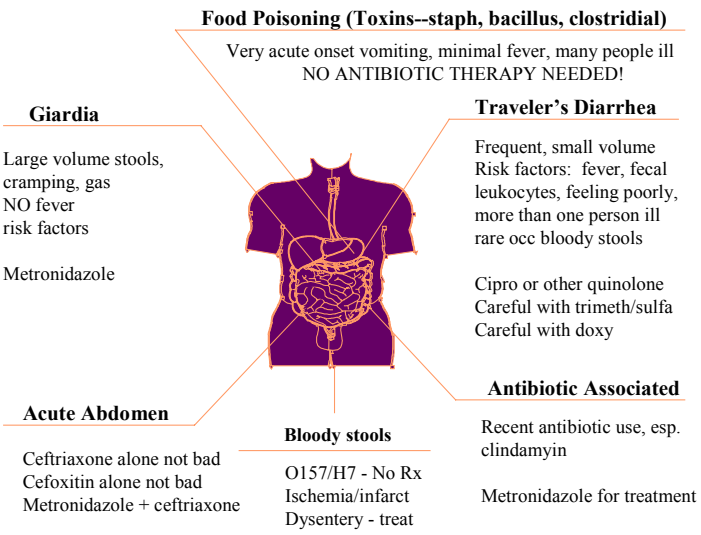
A 40 year-old female sustains a cat bite to her left thenar eminence. She cleans the area but develops rapidly progressive pain, erythema and swelling over the next 24 - 48 hours.
*Which organism is most likely responsible?*

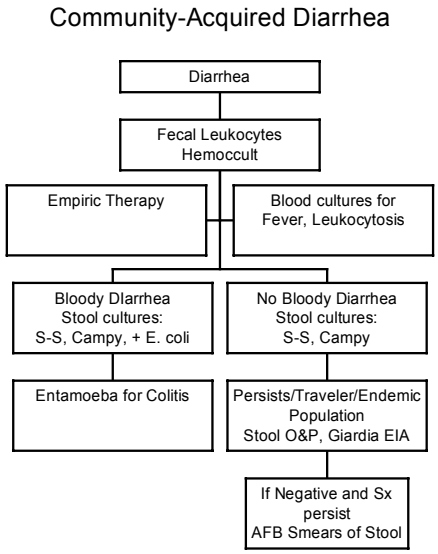
*Pasturella multocida*

**Animal Bites/Human Bites**
Need for prophylaxis is debatable
Be consistent if you choose to prophylax
*3 days of antibiotics only*
Amoxicillin/clavulanate or doxycycline

## Gastrointestinal Diseases

A 30 year-old male returns from a Thailand vacation and develops crampy abdominal pain, 2-4 voluminous, foul smelling, gaseous stools per day, especially after eating. No fevers, chills or systemic symptoms are noted.

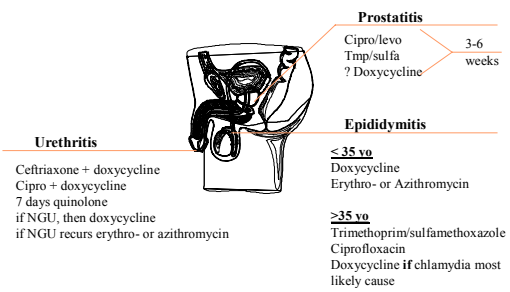



## Sexually Transmitted Diseases

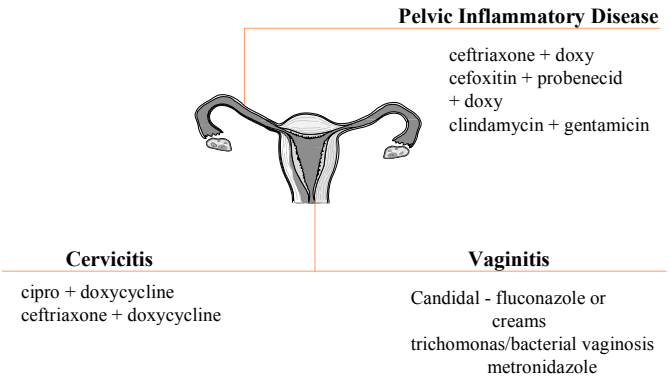
A 24 year-old white male presents with burning sensation during urination and a colorless discharge in his under pants. He admits to unprotected sexual intercourse 10 days ago.
*Knowing lab results will not be available for at least 24-48 hours, how do you treat this patient?*

*Neisseria gonorrhea* strains are developing resistance to many traditionally used antibiotics. Penicillin and ciprofloxacin are now virtually useless in a number of geographic regions, including Korea, when gonorrhea is suspected. In 2001, cases of gonorrhea strains with decreased sensitivity to cefixime (Suprax) were reported in Hawaii. There are suggestions such strains may also be present in Japan and potentially other Asian countries as well. These cases responded to treatment with spectinomycin, although it is likely that high-dose cephtriaxone may also have been effective.




A 30 year-old African-American woman reports 3 days of vaginal discharge with no fever, abdominal pain, pruritis (locally) or foul smell. She admits to having multiple partners and occasionally uses barrier protection. You perform a bimanual examination which is negative for pain or tenderness and your speculum examination reveals purulent cervical discharge.

Included in the differential diagnosis are endometritis, salpingitis, tubo-ovarian abscess, and pelvic peritonitis. Laparoscopy is likely the best way to diagnose PID but the procedure may miss endometritis, or early minimally inflammatory disease. As with urethritis, *N. gonorrhea* and *C. trachomatis* are the most likely causes, but other cervical organisms have been isolated, particularly when cultures were obtained laparoscopically.




## Approach to Other Commonly Resistant Bacteria

### MRSA, VISA and VRSA

Much recent work has been done with methicillin-resistant and vancomycin-intermediate-sensitive *S. aureus* strains (MRSA and VISA). It is important to remember that some *S. aureus* may still be penicillin sensitive. Beta-lactamase-producing *S. aureus* will still be sensitive to nafcillin, clavulanate, and trimethoprim/sulphamethoxazole.
Methicillin-resistance results from an alteration in one of the penicillin-binding proteins (PBP2'). This alteration results in deficient binding of beta-lactam antibiotics.
MRSA strains are commonly found in tertiary care facilities, the elderly, persons with a long hospital stay, the seriously ill, and ICU patients. Common sites include surgical wounds and IV sites. Immediate infections can be treated with vancomycin, possibly clindamycin in some cases, and trimethoprim/sulbactam. In some cases rifampin may be used in combination for better coverage. However, studies demonstrate that eradication of the carrier state is temporary at best.

VISA was felt to be a harbinger of what is to come in the field of antibiotic resistance. To date, eight cases of vancomycin-intermediate sensitive *S. aureus* have been documented in the United States. However, the future appears to have arrived. The Centers for Disease Control and Prevention confirmed the first case of vancomycin-resistant *S. aureus* (VRSA) was isolated in the United States this June. All cases of both VISA and VRSA have occurred in chronically ill patients as described above. No outbreaks of VISA have been reported.

### Vancomycin-Resistant Enterococci (VRE)

Enterococci are commonly occurring, generally non-virulent bacteria that are inherently resistant to antibiotics. They can cause disease however, in immune-compromised populations. Treatment requires the use of ampicillin or penicillin in combination with an aminoglycoside for synergism to produce actual bacteriocidal activity. One case of VRE was seen at the Seoul Army Community Hospital (formerly the 121 General Hospital) in 2001.

### Other Resistant Bacteria

Another nasty bacteria on the horizon is penicillin-insensitive *Streptococcus pneumoniae*, which is increasing world-wide and at times comprises as many as 50% of isolates in a given institution. It is especially prevalent in Asia. In 2001, the Seoul Army Community Hospital reported one inpatient and one outpatient *S. pneumoniae* isolate, which were resistant to penicillin. Both isolates were also resistant to trimethoprim-sulfamethoxazole, while the outpatient isolate was also resistant to tetracycline and erythromycin.

Person-to-person spread has been documented for these resistant strains, and highlights the role of traditional, low-tech means of infection control. Hand-washing has been demonstrated to be the key to decreasing the spread of these agents.

# Newer Antibiotics

## Quinolones

First introduced in 1984, the quinolones have been a welcome development in the war against bacterial infections. They are relatively broad-spectrum with lower durations of therapy, which improve patient compliance. Unfortunately their effects on bone and tooth development limit their use in children and pregnant women. However, bacterial resistance to this group is here and growing. In 2001, Seoul Army Community Hospital *E. Coli* isolates from inpatients demonstrated an overall decreased sensitivity to this antibiotic. *N. gonorrhea* strains also demonstrated decreased sensitivity. Levofloxacin, gatifloxacin, and moxifloxacin have predictable gram-positive activity and some activity against gram-negative rods with the exception of pseudomonas. They are useful in community-acquired pneumonias and sinusitis, but are not more beneficial in cellulitis (as discussed above) unless rare organisms are suspected. Only levofloxacin is available on the 18th MEDCOM formulary.

## Linezolid

Oxazolidinone is of interest for several reasons. It is 100% bioavailable, so the efficacy of the parenteral and oral routes of administration are identical. It is currently felt to be useful against MRSA, MSSA, penicillin-resistant *S. pneumoniae*, and VRE. However, it is very expensive, costing approximately 60 dollars per day. Consequently, it has limited availability with no real niche at this point, and is little more than a drug looking for a place in the pharmaceutical armamentarium. Despite these drawbacks, many feel it is already being overused.

**--contributed by LTC Joel Fishbain, M.D., WRAMC Dept of Medicine**

## Additional Resources:

http://www.nfid.org/publications/clinicalupdates/id/outpatient.pdf

http://www.nfid.org/publications/clinicalupdates/id/resistanthealthcare.html

### Smoking Cessation Order Set Instructions

After entering the patient name and preparing to enter new orders, at the prompt for 'ORDER TYPE', type "SET." At the next prompt, type 'tob' (small case letters). A list of medications will appear; choose the one indicated for that patient. Quantities and refills may be edited. A number of other order set have been prepared, which may be useful for many other common clinical situations.

# DISEASE TRENDS

**18th MEDCOM Reportable Events Program**

## Selected Reportable Events Incidence Summary
## JUN 2002

| Reportable Condition | Area I | Area II | Area III | Area IV | Totals |
|---|---|---|---|---|---|
| Trichomonas | 1 | 1 | 0 | 1 | 3 |
| Chlamydia | 28 | 14 | 3 | 6 | 51 |
| Herpes simplex | 4 | 1 | 1 | 1 | 7 |
| Gonorrhea | 6 | 1 | 2 | 13 | 22 |
| Syphillis | 0 | 0 | 0 | 0 | 0 |
| HIV | 1 | 0 | 0 | 0 | 1 |
| STD Totals | 40 | 17 | 6 | 21 | 84 |
| Tuberculosis (active disease) | 0 | 0 | 0 | 1 | 1 |
| Tuberculosis (recent converter) | NR | 3 | 6 | 19 | 28 |
| Animal Bites | 1 | 1 | 0 | 0 | 2 |
| Heat Injury | 2 | 1 | NR | NR | 3 |
| Deaths from all causes | 0 | 0 | 0 | 0 | 0 |

NR=None Reported

### Perspective

To offer some perspective to these numbers, our incidence of chlamydia is comparable to those reported in the entire state of Vermont, and exceeds that reported for the territory of Guam.

Our gonorrhea rates exceed those in New Hampshire, Maine and Vermont, Montana, North Dakota, Wyoming and Idaho (see the current MMWR for more details: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5126md.htm).

# Reported Events Summary, USFK: JUN 2002

| Conditions | | Jun 2002 | Cum 2002 | Cum 2001 |
|---|---|---|---|---|
| **STD** | Chlamydia | 51 | 265 | 45 |
| | Gonorrhea | 22 | 91 | 26 |
| | Herpes Type II | 7 | 10 | 2 |
| | HIV/AIDS | 1 | 3 | |
| | Trichomonas | 3 | 11 | |
| | Syphilis | 0 | 1 | 1 |
| **Infectious Diseases** | Campylobacter | 0 | 1 | |
| | Cholera | 0 | 0 | |
| | E.Coli 0157:H7 | 0 | 0 | |
| | Encephalitis | 0 | 0 | |
| | Giardiasis | 0 | 0 | |
| | Hepatitis A | 0 | 0 | |
| | Hepatitis B | 1 | 3 | |
| | Hepatitis C | 0 | 0 | |
| | Influenza | 0 | 0 | |
| | Measles | 0 | 0 | |
| | Meningoccal Meningitis | 0 | 0 | 1 |
| | Pneumococcal Pneumonia | 0 | 0 | |
| | TB, Active | 1 | 5 | 2 |
| | PPD Conversion | 28 | 119 | 19 |
| | Salmonellosis | 3 | 6 | 3 |
| | Shigellosis | 0 | 0 | |
| | Typhoid Fever | 0 | 0 | |
| | Varicella, adult | 0 | 1 | 2 |
| **Vector-borne Diseases** | Dengue Fever | 0 | 0 | |
| | Ehrlichiosis | 0 | 0 | |
| | HFRS | 0 | 0 | |
| | Japanese Encephalitis | 0 | 0 | |
| | Leptospirosis | 0 | 0 | |
| | Malaria | 1 | 5* | 12^ |
| | Rabies | 0 | 0 | |
| | Scrub Typhus | 0 | 0 | |
| **Injuries** | Animal Bites | 2 | 10 | 17 |
| | Cold Injury | 0 | 3 | |
| | Heat Injury | 3 | 4 | 5 |
| | CO Poisoning | 0 | 0 | |
| | Lead poisoning | 0 | 0 | |
| | Hearing Loss | 0 | 0 | |
| **Immunization** | VAERS | 0 | 0 | |
| | Influenza | 0 | 0 | |

***Notes***:
**One case represents disease contracted outside the ROK*
***^****Indicates cases diagnosed while in the ROK; additional 17 cases were diagnosed after return to US*
***Please refer to the reverse of the 18th MEDCOM IHO Reportable Events Worksheet for a complete listing of reportable events. This form is available at*** https://www.seoul.amedd.army.mil/Pm/Forms/Reportdisform18medFeb02.pdf**.**